

OLDEST BEE PAPER  
IN AMERICA

THE AMERICAN  
**BEE JOURNAL**

ESTABLISHED  
IN 1861

DEVOTED EXCLUSIVELY TO PROGRESSIVE BEE CULTURE.

Vol. XVIII.

Chicago, Ill., November 22, 1882.

No. 47.

**BEE JOURNAL**

Published every Wednesday by

**THOMAS C. NEWMAN,**

EDITOR AND PROPRIETOR,

925 WEST MADISON ST., CHICAGO, ILL.

At \$2.00 a Year, in Advance.

If Any person sending a club of six is entitled to an extra copy (like the club) sent to any address desired. Sample copies furnished free.

George Neighbour & Sons, London, England, are our authorized agents for Europe.

Postage to Europe 50 cents extra.

Entered at Chicago post office as second class matter.

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**Another Editorial Change.**—On the first of January next, the *British Bee Journal* is to change hands. The present editor, Mr. C. N. Abbott, who has done very much to encourage and advance the interests of bee-keepers in Great Britain, will retire, and the Rev. Herbert R. Peel, the honorary secretary of the British Bee-Keepers' Association, will be duly installed as its editor. While extending our congratulations to Mr. Abbott for his able management in the past, we welcome the new editor, Mr. Peel, through whose exertions the British Bee-Keepers' Association has been made so much of a success.

**Mr. James Anderson,** the apriarist from Scotland, who is on his way home now, after a tour of this country for the past 4 months, called at the *BEE JOURNAL* office last Thursday. He goes to New York, and thence to Glasgow, where he will, no doubt, be welcomed home by the Caledonian bee-keepers, among whom he is one of the most progressive and successful.

**Mr. George Doolittle,** of Bridgeport, Conn., has sent us some fasteners for holding the wires in frames, which he desires us to place in the *BEE JOURNAL* Museum, for the inspection of visitors, which we have cheerfully done. They consist of small links of a metal chain cut in two so as to form little staples.

We had a pleasant call from Mr. O. O. Poppleton, of Williamstown, Iowa, on Friday last. He was on his way to Florida, to spend the winter.

**Jordan's White Sulphur Springs,** we notice by the *Baltimorean*, is to undergo many valuable improvements during the winter. Mr. Jordan, who is one of the most thorough and progressive apiarists in Virginia, is also the very popular proprietor of the "Springs," which is one of the leading summer resorts of the Southeast. We have received an invitation to spend a few weeks there next summer, and should be delighted to accept, could we leave the office for so long.

**We notice a very complimentary item in the Union City, Ind., *Eagle*,** showing a correspondent's appreciation of the *BEE JOURNAL*, and the benefit it has been to him in the management of his bees.

**The Quarterly Report of the Kansas State Board of Agriculture,** for the quarter ending September 30, has just been issued.

The report contains the acres and product of principal crops, by counties, accompanied by market quotations of the Kansas City market for each month from January, 1877, to September, 1882, for the crops of wheat and corn and can be obtained by addressing the Secretary, Wm. Sims, Topeka, Kansas, and inclosing the necessary postage, three cents.

**Honey,** according to A. Vogel, says the *Scientific American*, contains on an average one per cent of formic acid. Observing that crude honey keeps better than that which has been clarified, E. Mylius has tried the addition of formic acid, and found that it prevents fermentation without impairing the flavor of the honey.

**Renewals may be made at any time;** but all papers are stopped at the expiration of the time paid for, unless requested to be continued.

**Sir J. Lubbock's New Book on Bees.**

**ANTS, BEES AND WASPS.** A Record of Observations, on the Habits of Social Hymenoptera. By SIR JOHN LUBBOCK, M. P., F. R. S., etc, New York : D. Appleton & Co. 1882. Price, \$2.00.

We have received from the publishers the above work for review in the AMERICAN BEE JOURNAL.

As stated by the author, it is a "record of observations" which were, doubtless, made with much care, but not for the purpose of sustaining any theory regarding them, but to ascertain existing facts. In his preface, the author says: "My object has been not so much to describe the usual habits of these insects as to test their mental condition and powers of sense." And, in another place, he says: "I have endeavored, therefore, by actual experiments, which anyone may, and I hope others will, repeat and verify, to throw some light on these interesting questions."

But few scientific workers have spread their interests over so wide a field as Sir John Lubbock; but we may easily discover that a thread of continuity runs through all of them. His researches into the habits of bees, wasps and ants, deal with the evolution of social communities from the lower types of life. He holds that the ants are the nearest to man in social organization and general intelligence, though the apes are nearer in bodily structure. Ants even show some indication of progressive development among themselves. Some of them live by the chase, as do hunting savages; others, more highly evolved, resemble the pastoral races of men, because they have domesticated the aphides; the harvesting ants have risen still higher in civilization, and reach the agricultural man. He finds in their nests, analogy to human societies, in their marked division of labor, their elaborate architecture, their regular roadways, and in their peculiar institution of slavery. In some of these things, bees, also, show their near approach to man's intelligence.

At first, Sir John Lubbock intended to confine his experiments to bees and wasps, but he found these insects with wings were unpleasantly excitable in temper and could easily elude his watchfulness. This led him to deal more particularly with the ants, which were much easier to observe from every point of view.

Hour after hour did the author watch his bees and wasps with unceasing care, and he has recorded their

movements with minuteness in this volume.

The author thinks that bees and ants have, in their antennæ, some means of communication with one another. His experiments on the perception of color by the bees show that they can distinguish all the hues as well as can man, and these observations will, in some measure, at least, account for the origin and development of the prismatic hues of flowers.

In order to show the author's experiments in detail on many mooted points, we will here give some extracts from Chapter X. Sir John Lubbock says:

As already mentioned, the current statements with reference to the language of social insects depend much on the fact that when one of them, either by accident or in the course of its rambles, has discovered a stock of food, in a very short time many others arrive, to profit by the discovery. This, however, does not necessarily imply any power of describing localities. If the bees or ants merely follow their more fortunate comrade, the matter is comparatively simple; if, on the contrary, others are sent, the case becomes very different.

In order to test this I proposed to keep honey in a given place for some time, in order to satisfy myself that it would not readily be found by the bees; and then, after bringing a bee to the honey, to watch whether it brought others, or sent them—the latter of course implying a much higher order of intelligence and power of communication.

I therefore placed some honey in a glass, close to an open window in my sitting-room, and watched it for sixty hours of sunshine, during which no bees came to it.

I then, at 10 a.m., on a beautiful morning in June, went to my hives, and took a bee which was just starting out, brought it in my hand up to my room (a distance of somewhat less than 200 yards), and gave it some honey, which it sucked with evident enjoyment. After a few minutes it flew quietly away, but did not return; nor did any other bee make its appearance.

The following morning I repeated the same experiment. At 7:15 I brought up a bee, which sipped up the honey with readiness, and after doing so for about four minutes flew away with no appearance of alarm or annoyance. It did not, however, return; nor did any other bee come to my honey.

On several other occasions I repeated the same experiments with a like result. Altogether I tried it more than twenty times. Indeed, I rarely found bees to return to honey if brought any considerable distance at once. By taking them, however, some twenty yards each time they came to the honey, I at length trained them to come to my room. On the whole, however, I found it more con-

venient to procure one of Marriott's observatory hives, both on account of its construction, and also because I could have it in my room, and thus keep the bees more immediately under my own eye. My room is square, with three windows, two on the southwest side, where the hive was placed, and one on the southeast. Besides the ordinary entrance from the outside, the hive had a small postern door opening into the room; this door was provided with an alighting-board, and closed by a plug; as a general rule the bees did not notice it much unless the passage was very full of them.

I then placed some honey on the table close to the hive, and from time to time fed certain bees on it. Those which had been fed soon got accustomed to come for the honey; but partly on account of my frequent absence from home, and partly from the difficulty in finding their way about, and their tendency to lose themselves, I could never keep any marked bee under observation for more than a few days. . . . . I might give some other similar cases, but these are, I think, sufficient to show that bees do not bring their friends to share any treasure they have discovered, so invariably as might be assumed from the statements of previous observers. Possibly the result is partly due to the fact that my room is on the top floor, so that the bees coming to it flew at a higher level than that generally used by their companions, and hence were less likely to be followed.

Indeed, I have been a good deal surprised at the difficulty which bees experience in finding their way.

For instance, I put a bee into a bell-glass 18 inches long, and with a mouth  $\frac{1}{2}$  inches wide, turning the closed end to the window; she buzzed about for an hour, when, as there seemed no chance of her getting out, I put her back into the hive. Two flies, on the contrary, which I put in with her, got out at once. At 11:30 I put another bee and a fly into the same glass: the latter flew out at once. For half an hour the bee tried to get out at the closed end; I then turned the glass with its open end to the light, when she flew out at once. To make sure, I repeated the experiment once more, with the same result.

Some bees, however, have seemed to me more intelligent in this respect than others. A bee which I had fed several times, and which had flown about in the room, found its way out of the glass in a quarter of an hour, and when put in a second time came out at once. Another bee, when I closed the postern door which opened from my hive directly into my room, used to come round to the honey through an open window.

One day (April 14, 1872), when a number of them were very busy on some berries, I put a saucer with some honey between two bunches of flowers; these flowers were repeatedly visited, and were so close that there was hardly room for the saucer between them, yet from 9:30 to 3:30 not a single bee took any notice of the honey. At 3:30 I put some honey on one of the bunches of flowers, and it

was eagerly sucked by the bees; two kept continually returning till past five in the evening.

One day, when I came home in the afternoon, I found that at least a hundred bees had got into my room through the postern and were on the window, yet not one was attracted by an open jar of honey which stood in a shady corner about three feet five inches from the window.

Another day (April 29, 1872), I placed a saucer of honey close to some forget-me-nots, on which bees were numerous and busy; yet from 10 a. m. till 6 only one bee went to the honey.

I put some honey in a hollow in the garden wall opposite my hives at 10:30 (this wall is about five feet high and four feet from the hives), yet the bees did not find it during the whole day.

On March 30, 1873, a fine, sunshiny day, when the bees were very active, I placed a glass containing honey at 9 in the morning on the wall in front of the hives; but not a single bee went to the honey the whole day. On April 20 I tried the same experiment with the same result.

*September 19.*—At 9:30 I placed some honey in a glass about four feet from and just in front of the hive, but during the whole day not a bee observed it.

As it then occurred to me that it might be suggested that there was something about this honey which rendered it unattractive to the bees, on the following day I first placed it again on the top of the wall for three hours, during which not a single bee came, and then moved it close to the alighting-board of the hive. It remained unnoticed for a quarter of an hour, when two bees observed it, and others soon followed in considerable numbers.

It is generally stated not only that the bees in a hive all know one another but also that they immediately recognize and attack any intruder from another hive. It is possible that the bees of a particular hive have a particular smell. Thus Langstroth, in his interesting Treatise on the Honey Bee, says, "Members of different colonies appear to recognize their hive companions by the sense of smell;" and I believe that if colonies are sprinkled with scented syrup they may generally be safely mixed. Moreover, a bee returning to its own hive with a load of treasure is a very different creature from a hungry marauder; and it is said that a bee, if laden with honey, is allowed to enter any hive with impunity. Mr. Langstroth continues: "There is an air of roguery about a thieving bee which, to the expert, is as characteristic as are the motions of a pickpocket to the skillful policeman. Its sneaking look and nervous guilty agitation, once seen, can never be mistaken." It is at any rate natural that a bee which enters a wrong hive by accident should be much surprised and alarmed, and would thus probably betray herself.

So far as my own observations go, though bees habitually know and return to their own hive, still, if placed on the alighting-board of another, they often enter it without molestation.....

Though bees which have stung and lost their sting always perish, they do not die immediately; and in the meantime they show little sign of suffering from the terrible injury. On August 25, a bee which had come several times to my honey was startled, flew to one of the windows, and had evidently lost her way. While I was putting her back she stung me, and lost her sting in doing so. I put her in through the postern, and for twenty minutes she remained on the landing stage; she then went into the hive, and after an hour returned to the honey and fed quietly, notwithstanding the terrible injury she had received. After this, however, I did not see her any more.

Like many other insects, bees are much affected by light. One evening, having to go down to the cellar, I lit a small covered lamp. A bee which was out came to it, and flying round and round like a moth, followed me the whole of the way there.

I often found that if bees which were brought to honey did not return at once, still they would do so a day or two afterwards. For instance, on July 11, 1874, a hot thundery day, and when the bees were much out of humor, I brought twelve bees to some honey; only one came back, and that one only once; but on the following day several returned.

My bees sometimes ceased work at times when I could not account for their doing so. October 19 was a beautiful, sunshiny, warm day. All the morning the bees were fully active. At 11:25 I brought one to the honeycomb, and she returned at the usual intervals for a couple of hours; but after that she came no more, nor were there any other bees at work. Yet the weather was lovely, and the hive is so placed as to catch the afternoon sun. ....

Far, indeed, from having been able to discover any evidence of affection among them, they appear to be thoroughly callous and indifferent to one another. As already mentioned, it was necessary for me occasionally to kill a bee; but I never found that the others took the slightest notice. Thus, on Oct. 11, I crushed a bee close to one which was feeding—in fact, so close that their wings touched; yet the survivor took no notice whatever of the death of her sister, but went on feeding with every appearance of composure and enjoyment, just as if nothing had happened. When the pressure was removed, she remained by the side of the corpse without the slightest appearance of apprehension, sorrow or recognition. She evidently did not feel the slightest emotion at her sister's death, nor did she show any alarm lest the same fate should befall her also. In a second case exactly the same occurred. Again, I have several times, while a bee has been feeding, held a second bee by the leg close to her; the prisoner, of course, struggled to escape, and buzzed as loudly as she could; yet the bee which was feeding took no notice whatever. So far, therefore, from being at all affectionate, I doubt whether bees are in the least fond of one another.....

Thus in nine experiments, out of the

ninety-seven bees which came out first, no less than seventy-one were marked ones, though out of the whole number of bees in the hive there were only twelve marked for this purpose, and, indeed, even fewer in the earlier experiments. I ought, perhaps, to add that I generally fed the bees when I called them out.

#### THE SENSE OF HEARING.

*August 29.*—The result of my experiments on the hearing of bees has surprised me very much. It is generally considered that to a certain extent the emotions of bees are expressed by the sounds they make, which seems to imply that they possess the power of hearing. I do not by any means intend to deny that this is the case. Nevertheless I never found them take any notice of any noise which I made, even when it was close to them. I tried one of my bees with a violin. I made all the noise I could, but to my surprise she took no notice. I could not even see a twitch of the antennae. The next day I tried the same with another bee, but could not see the slightest sign that she was conscious of the noise. On August 31 I repeated the same experiment with another bee with the same result. On September 12 and 13 I tried several bees with a dog-whistle and a shrill pipe; but they took no notice whatever, nor did a set of tuning-forks which I tried on a subsequent day have any more effect. These tuning-forks extended over three octaves, beginning with a below the ledger line. I also tried with my voice, shouting, etc., close to the head of a bee; but, in spite of my utmost efforts, the bees took no notice. I repeated these experiments at night when the bees were quiet; but no noise that I could make seemed to distract them in the least.

In this respect the results of my observations on bees entirely agree with those on ants, and I will here, therefore, only refer to what has been said in a preceding chapter.

#### THE COLOR SENSE OF BEES.

The consideration of the causes which have led to the structure and coloring of flowers is one of the most fascinating parts of natural history. Most botanists are now agreed that insects, and especially bees, have played a very important part in the development of flowers. While in many plants, almost invariably with inconspicuous blossoms, the pollen is carried from flower to flower by the wind, in the case of almost all large and brightly colored flowers this is effected by the agency of insects. In such flowers the colors, scent, and honey serve to attract insects, while the size and form are arranged in such a manner that the insects fertilize them with pollen brought from another plant.

There could, therefore, be little doubt that bees possess a sense of color. Nevertheless I thought it would be desirable to prove this if possible by actual experiment, which had not yet been done. Accordingly on July 12 I brought a bee to some honey which I placed on blue paper, and about 3 feet

off I placed a similar quantity of honey on orange paper. After she had returned twice I transposed the papers; but she returned to the honey on the blue paper. After she had made three more visits, always to the blue paper, I transposed them again, and she again followed the color, though the honey was left in the same place. The following day I was not able to watch her; but on the 14th, at 7:29 a.m., she returned to the honey on the blue paper; she left at 7:31 and returned at 7:44; she again left at 7:51 and returned at 7:56.

I then again transposed the papers. At 8:5 she returned to the old place, and was just going to alight; but observing the change of colors, without a moment's hesitation darted off to the blue. No one who saw her at that moment could have entertained the slightest doubt about her perceiving the difference between the two colors.

The book is a very interesting one and we can supply it at the publishers' price, postpaid.



#### MISCELLANEOUS.

**Bee-keeping in Maine.**—Mr. E. P. Churchill writes thus to the *Home Farm*, concerning his fall and winter management of bees:

This season has been rather a poor one, on the whole, for bees, until a few weeks ago, when the honey was coming in much faster than at any other time and all looked bright; but a few cold days shut them up for a time; and more than the cold, we have now had a very heavy rain for a number of days, which will wash out and dilute much of the nectar that was so plenty in the goldenrod, and what few other fall flowers there are. But if the month opens clear and warm for a few days we are in hopes of an opportunity for a little more stores for wintering. But be the case as it may, let us attend to them at once, to know just how every colony is.

If they are on a full set of frames there should be about one-half taken out as soon as the brood is all hatched or out of the cells, and a division board set down on each side of what frames are left, and leaves filled in the open spaces. I find cedar shingles make the best division boards, by running the thin ends to lap each other so as to be one-fourth of an inch shorter than the hive, and deep enough to come up level with the tops of the frames; then clear them at each end and in the middle, and have them perfectly square and even; then tack one thickness of woolen cloth on the bottom and enough on the ends to cause them to fit snug when run down. I

leave a few inches of cloth on the upper ends to roll down and tuck down into the ends of the boards. This is very handy, as it is always ready, keeps all snug, and also keeps the bees from getting outside. There need not be strips of cloth on the tops of the boards, as the cloth that covers the frames will answer. Now this is done there should be a chaff cushion on the cloth over the frames. A bran sack is a good and cheap article for this purpose and oat chaff the best, but if this chaff is not to be obtained, about half very dry leaves and sawdust mixed will do. The cushion should be four inches thick and filled out even at all corners, and packed down quite snug. If the rims and cap are all nailed together, I would take the cap off and put strips under at each end so as to shut outside of the rim; then there is a good chance to do all packing, etc., very handily.

One who has never used hives thus, will be surprised with one trial, for it is impossible to do the packing thoroughly with the rim and cap altogether. There should, of course, be no cracks, no holes for the least rain to get in, but there should be an inch air hole at each end and at the side of the rim near the top, bored slanting to turn water, and wire cloth tacked inside. These will take away the moisture that passes up through the packing, and keep the bees dry and warm. I did not lose one-half a pint of bees from my two heaviest colonies last winter packed in this manner.

**Food Adulterators.**—The *Western Rural* contains the following very sensible article on food adulterations, and the way to punish the adulterators:

Our coming legislatures in the West will need give some further attention to the subject of adulterating food products. In Illinois and in some other States we have some pretty good statutes touching upon this matter, but, perhaps, they are all susceptible of improvement, and if not, we sincerely believe that all attempts to legislate in such cases, are a most excellent means of agitation and of arousing the people to action. We are among those who believe that we should be vastly better off if we had less law making, but as we seem to be fated to have the infliction of a legislature every year, or every two years at least, we are in favor of their making all the noise possible on such important questions as that of putting a stop to the infamous work of the adulterators. The last legislature of Illinois gave us a very fair law against the sale of bogus butter as the genuine article, and for a time, there was an energetic and successful effort to enforce the law. Recently, however, there seems to have been a suspicious calm after the storm, and a corresponding suspicious flavor to a considerable of the butter that is found in the market. There are fairly grounded fears that the people have gone to sleep, and if we can get the legislature to discuss the matter again,

and some such man as Evans, of Kane county, running about to raise a corruption fund to prevent legislation against food adulteration—as was the case when our last legislature sat—it will undoubtedly have the effect of once more attracting public attention.

We have about the least patience with food adulterations that we are called upon to manifest. The common swindler who assaults the pocket-book alone, will probably meet in time something like just punishment in the penitentiary; but the conscienceless scamp who robs us of both our money and our health, can never be punished according to his deserts; and the knowledge of this greatly irritates us. Our farmers are quietly engaged in raising products which support our population and add wealth to the nation. They are producing the flour which makes our bread, the honey and syrups which sweeten it, the sugar that makes our tea and coffee palatable, the butter and cheese and vinegar which we demand for daily consumption; and with the railroad to cut deeply into his profits, boards of trade to gamble with his products, until prices are forced down below what they ought to be, and with the tax collector demanding of him his own tax and the tax of a whole horde of tax shirkers besides, he stands poor enough show, without being compelled to compete with dishonest imitators of the products named. But without stringent legislation to prevent it, our stores are filled with adulterated flour, glucose for honey and the sweets of the cane, oleomargarine butter and cheese, and vile acids for cider vinegar. It costs next to nothing to manufacture these imitations, and if they are sold a few cents cheaper than the genuine articles are sold for, under the representation that they are first-class, which they often look to be and taste as if they were, it does not require much perception to see that an incalculable injury is done the honest producer. During the last half dozen years we believe that millions of dollars have been wrongfully taken from the pockets of our farmers through the audacious adulteration of farm products, and during that time we have no doubt that thousands have lost their lives by eating such imitations. The business, therefore, assumes a most villainous character, in whatever light it is viewed, and there is no class of our people, except those who are engaged in the disreputable business, that is not interested in having a stop put to it. The legislatures or Congress—and there is great need of national legislation upon this subject—cannot find a more hearty or universal support in legislation than they will find in any attempt to protect the producer and consumer from these greedy leeches. The *Rural*, in behalf of the producer, demands that the market shall be cleared of bogus food products which are not so marked as to convey a clear idea of their character. When so marked, they will not be very productive of harm, for the great majority of people will not purchase imitations if they know what they are.



For the American Bee Journal.

**How I Built My Bee Cellar.**

G. M. DOOLITTLE.

During the winter of 1875-6, I ascertained that P. H. Elwood, Capt. J. E. Hetherington, and other extensive apiarists in Herkimer, Montgomery and Otsego counties, N. Y., wintered their bees quite successfully in what was called "mud huts."

These were made by digging a place, about four feet deep, in the ground, and providing a good drain therefor. Timbers were laid on the ground for the plates, upon which was placed the roof, which was about five feet high from the bottom, at the sides; and in the center, from 7 to 9, according to the width of the cave. The whole was then covered with earth to the depth of 2 to 3 feet. Over the earth was placed another roof to keep the dirt between the upper and lower roof dry. In the front end a portion was partitioned off, in which was placed a stove, the heat from which was made to permeate the bee cellar as desired, so as to maintain the temperature considered necessary for successful wintering.

After the chaff packing had been decided to be a success, I conceived the idea of wintering a part of my bees out on their summer stands, and a part in the cellar, thus working on the plan which is called "mixed farming" by those tilling the soil about here. Accordingly, in 1876, I prepared chaff hives for a part, and built a cheap temporary cellar for the rest. Instead of regulating the temperature with stoves, as was done by my bee friends of the East, I placed this temporary cellar in a hillside, believing that, if it went into the earth deep enough, an even temperature would be maintained without the aid of a stove, which proved to be a fact, for the temperature in this cellar did not change more than two degrees during all the winter.

After using it a few years I ascertained that a winter that was favorable for outdoor wintering was not as favorable for cellar wintering, and vice versa, thus proving that the plan of mixed wintering was a good one.

In the spring of 1879, out of ninety left on their summer stands, only fifteen came through; while fifty-three out of sixty, wintered in this cellar, came out in excellent condition. The following spring, after a very mild winter, all those out of doors came out strong, while the bee-cellars gave a loss of 10 per cent. However, the percentage of loss for the term of six years was far greater out of doors than in the cellar; hence this fall I have put up a permanent bee-cellars in place of the temporary one, and shall hereafter winter at least half of my bees in it.

Near my apiary is a small knoll, and into this I dug thirty-two feet, by nine

feet wide. A drain was then dug around the outside, which was eighteen inches deep at the front, and six inches at the back. This drain was filled up level with the ground, or floor of the cellar, with small stone. From the lowest point of this drain I dug a ditch one hundred feet long, in which was placed two tiers of three and one-half inch tiles, one above the other, and so arranged as to serve the place of ventilation and drain combined, if any water should accumulate in the drain around the cellar. These tiles were covered to the depth of about three feet, so as to warm the air as it came to the bee-cellars. Upon the drain around the cellar, a good wall was built of stone, laid up with mortar, which is five feet eight inches high and gives me a cellar twenty-four feet long and six and one-half feet wide inside. Upon the top of the wall I placed plates 4x6 inches square, bedding them in mortar, which raised my walls to six feet high. Upon these plates, rafters were placed close together, so as to hold a great weight, and then covered with inch boards. A ventilator was placed in the opposite end, giving about two-thirds the capacity of the other, when the whole was covered to the depth of three and one-half feet with dry earth; over this was placed an outer roof, which extends six feet farther out than the wall on either side, and a good incline was given, to conduct all the water off.

The front end of the cellar is three and one-half feet lower than the surface of the ground about it, while the back end is about ten feet. I intended to grout the bottom with gravel and mortar, but the ground was so hard and dry that I have postponed it, for the present at least. At the end next the bee yard, I placed three well-built door frames, which were two feet apart from center to center. To these were spiked plank at the sides and on top, and covered with earth (with a slope wall standing out toward the bee-yard, so as to have as much earth here as elsewhere), over which the outer roof is allowed to come, so as to keep all dry. A door is hung on each door frame, which gives three doors and two dead air spaces, of two feet each, before the cellar is reached. The total cost of this cellar is a few cents over \$75.

The hives are to be set around the outside of the cellar, one on top of the other, with chaff, or fine straw used as packing, the same as if they were to be left out of doors. As an experiment I shall leave one row of hives with the entrance the same as they are when on the summer stand; another row will have the full entrance, a third be raised on half-inch blocks, and the fourth upon inch blocks.

The cellar will hold eighty hives and leave plenty of room for an aisle to the back end, and 120 if filled full. One-fourth of my colonies of bees were placed in this bee-cellars on Nov. 3d, and to-morrow I shall put in one-fourth more. In one week I shall place in another fourth, and on the first of December the remainder, which are to be placed therein, and see which

winters the best. Although the thermometer marks 40° inside, those already in are so still that scarcely a sound from them can be heard, but I find those raised on the inch blocks are aroused quicker by the light of the lamp when taken in.

About one-half of my number will be left on the summer stands, thoroughly packed in chaff, as heretofore, for I think such a course gives the best results, taking a number of years together.

If anyone could tell just what the winter would be beforehand, I would place my bees in the cellar for a cold winter, and leave them out during a mild one; but as no one can do this, I adopt the above, considering it the best, all things considered.

Borodino, N. Y., Nov. 10, 1882.

For the American Bee Journal.

**Wintering Bees in Chaff.**

E. B. SOUTHWICK.

I have noticed some articles on wintering bees in chaff from some of our most consistent bee-keepers, and I think they are good, very good. I agree with them in what is necessary for successfully wintering our bees: that is, the bees should be young, healthy, and plenty of them; they should be kept dry and comfortable the entire season; they should have just food enough to keep them, and that easy of access at all time. If we can do this we may defy long, cold winters and all their consequences.

We have different ways of producing the same effect. Mr. Heddon's way is very good, and I think it will succeed; but I think it is more work, and not so handy, as Mr. Poppleton's; I suppose it is as good; as anyone could fix up such a hive as he uses.

Mr. Poppleton's way is so near like mine, that I will say nothing about it, only where it differs from mine. He says he has used his seven years, I have used mine about the same time, and think I have not lost a colony that was good in the fall, that did not die of starvation.

My way of packing and unpacking is as follows: My hive, inside, is 13 in. wide, 12 in. deep, and as long as I wish to have it. There is a space on each side of 4 inches to pack with chaff or leave as a dead air space,—and experiments have convinced me that the dead air space is as good without the chaff as with it. The back end board is loose and fastened in its place by a clasp across the end of the hive; it can be moved backward or forward to increase or diminish the size of the hive, at pleasure; the frame is made to stand on the bottom and not hang in the hive; it has a division in the centre and a slot that runs nearly from the top to the bottom; this slot answers instead of the holes that Mr. Poppleton makes in his combs, and the sticks that Mr. Heddon places across the top of his frames—that is, they all allow the bees to move comfortably from one part of the hive to another.

The frames run crosswise of the hive and the bees go in at the side instead of the ends of the frames; this I think better for several reasons. I will mention one: We find in all good colonies when the honey season closes, a quantity of brood in the centre of the hive, and as this brood hatches out, the bees bring the honey farthest from the centre to fill up the combs; in my hives they generally empty the front and back combs entirely, so that, when I pack up, I can remove them, but in long frames, and where they go in at ends of short ones, they will remove the honey from the ends of the frames to the centre, so that we cannot remove the frames without removing the honey they need for winter, and consequently have a quantity of unoccupied room at the ends of the frames, which I very much dislike in packing.

This is my plan for fixing them up for winter. I wait three or four weeks after the bees have stopped gathering honey, and then I commence by taking out all the combs and putting in front a cushion,  $2\frac{1}{2}$  inches thick; this closes all the outlets for the bees, except one, 2 inches by  $\frac{3}{8}$  inches, through which the bees can pass under the cushions to the frames. I then select from three to five combs (according to the size of the colony) well filled with honey, and put them in front next to the cushion, and if there are more of such, I brush off the bees and put them away for other colonies or for spring use. I then put in those partly filled, the heaviest first, until all are in that have any honey in, then put in the end board and cover up the hive. I let them remain two or three weeks longer, then open the hive; and if the weather has been warm, I will find that the bees have carried most of the honey from back combs to those partly filled near the center. I then remove all the combs except five to eight in front, put in a cushion like the front one, behind these, and put in the end board, put cloth over the frame, put on the surplus honey case or upper story, and in this place a thick cushion, tuck it down all round, put on the top and it is done. The cushion should not reach to the top into an inch or more.

Now for the unpacking. As we cannot tell what the weather will be in the spring, we cannot set any day to commence, but when I see the oak leaves begin to grow, I take off the front cushion, and when the corn begins to grow rapidly, I take off the back cushions, but I generally leave on the top one until I want the room for the sections.

Allow me to give an opinion or two of my own. I know that such are worthless without proof, but somebody else may prove them. Feeding to produce breeding I think is entirely wrong; for breeding out of season, in my opinion, uses up more bees than it produces, and those reared late in the season are not worth as much in the spring as those that reared them would have been, had they not reared them. Early breeding amounts to the same, and both are productive of spring dwindling.

The convention at Chicago was a good one, just such as I like to attend, where I can exchange thoughts and ideas, which are always useful. Some one there said Mr. Heddon had changed. Well, really! When you show me a man that never changes, I will show you a god or a fool. There is nothing more admirable in a man than for him to as publicly admit that he is wrong, if convinced, as he previously advocated it. I think Mr. Heddon belongs to that society, the first tenet of which is, "Do right because it is right, and not for love, fear or policy." Such being the case, we shall always expect an honest opinion from him whether it agrees with his previous assertions or not.

Mendon, Mich.

For the American Bee Journal.

#### The Syrian or Holy Land Bees.

REV. M. MAHIN, D. D.

It has been well said that the new races of bees are on trial; and, the only way to try them and ascertain their merits and demerits, is to place them side by side with the Italians, give them precisely the same treatment, and note the results. I have had one of them, the Syrian, on trial for more than a year past, and it will take me another year, at least, to decide whether I will supplant my Italians with them or not. I have never seen a Cyprian bee, and I have not much curiosity to try them, owing to their bad reputation for stinging qualities; but I have 22 colonies of Syrian or Holy Land bees, and I wish to report the results of my trial of them, so far. The most of those I had last summer were half-bloods, the queens having mated with Italian drones. In the latter part of the summer I had colonies that were pure.

They have more than sustained their reputation for prolificness; I have never before seen anything like it. I have not fully decided whether their prolificness may not be an objection to them. It is, unless precaution is taken to give them very large hives, or to remove combs of brood frequently and give empty combs or frames to make room for the queen to lay. Unless this is done, the surplus apartment is sure to be filled with brood in the midst of the honey harvest.

Taking the season through, I found the Syrians ahead of the Italians in the amount of honey gathered, with the exception of one or two extra Italian colonies, which equaled, but did not excel the Syrians. I found the half-blood Syrians to be wonderfully productive. Their comb building and honey gathering were marvelous during the time of the greatest yield.

What about their temper? Last fall I found them no more inclined to sting than the Italians. Last spring, while the weather was cool and little or no honey was being gathered, they were very cross, and it was exceedingly difficult to do anything with them; but when the flowers began to yield honey they were as gentle as could be

desired; and this fall, while preparing them for winter, in which process I handled every comb in every hive, I found them quite as manageable as my Italians. In fact I got more stings from the Italians than from the Syrians. I am of opinion that they learn gentleness from careful handling, more readily than either blacks or Italians.

I cannot express any very positive opinion in regard to their wintering qualities. I will probably know more on that subject in four or five months from now; but my observation is very different from Mr. Doolittle's. He represents the Syrians as being more restless than Italians; on the contrary, the most remarkable characteristic of mine last winter was their unusual quietness.

In the fall, after the flowers were all gone, we had many days of warm sunshine; and while the Italians were out in full force every day, very few Syrians were seen about the entrances of the hives, except once in several days when they would take a good fly. And what was true of them in the fall, was true during all of the warm weather last winter. While the Italians could fly the whole of every warm day, the Syrians would only fly for an hour or two, once in several days; no matter how warm the weather might be. I have not noticed much, if any, difference between the two races, in this particular, this fall; for we have had no warm weather when they could not find something to work on. They were carrying pollen on Nov. 11, and seemed to be loaded with honey also.

It may be that, in a locality in which there is very little honey to be gathered after basswood, the Syrians may not be desirable; but up to the present time I am inclined to give them the preference over all others.

Huntington, Ind., Nov. 14, 1882.

For the American Bee Journal.

#### Bees for Business—A Report.

S. A. SHUCK.

Enormous reports from single colonies have been given from all parts of the country, and great claims are being made for the various races of bees, especially the Cyprians and Syrians. The reports given were from entire apiaries and a few select or single colonies; and, in most cases, where large yields are reported from a few select colonies, the average for the entire apiary was only ordinary, and, in some instances, the average was small.

Mr. Carroll, of Texas, reports 1,000 pounds from one colony and its increase, and 800 lbs. from a single colony, yet this 1,800 lbs. is nearly one-third of the entire product of 36 colonies.

Mr. Heddon and Mr. Doolittle both claim to have superior strains of bees, yet they both complain, more or less, of the frequent occurrence of inferior queens. Mr. Doolittle reports having destroyed fifty or sixty queens, a year ago, on account of their inferiority.

I wish to submit a report of my little apiary for the past season, and

allow the readers of the BEE JOURNAL to judge as to whether, or not, I am entitled to the claim of having a superior strain of bees.

I wish, first, to submit the following table of 30 colonies containing bees on June 1, 1882:

STATISTICAL TABLE.

| Number of Colony. |    | Age of Queen.    | No. of Frames occupied, June 1, 1882. | No. of Brood and bees given during the season. | No. of Brood and bees taken away. | Comb Honey, lbs. | Extracted Honey, lbs. | Total product of each hive. |
|-------------------|----|------------------|---------------------------------------|--|-----------------------------------|------------------|-----------------------|-----------------------------|
| 1                 | 1  | 9                | ..                                    | 4  | 110                               | 32               | 142                   |                             |
| 2                 | 2  | 8                | ..                                    | 2  | 22                                | 152              | 174                   |                             |
| 3                 | 3  | 7                | ..                                    | 3  | 21                                | 130              | 151                   |                             |
| 4                 | 2  | 7                | ..                                    | 5  | ..                                | 196              | 196                   |                             |
| 5                 | 1  | 63               | ..                                    | ..   | ..                                | ..               | ..                    |                             |
| 6                 | 3  | 8                | ..                                    | 3  | ..                                | 132              | 132                   |                             |
| 7                 | 3  | 8                | ..                                    | 5  | ..                                | 228              | 228                   |                             |
| 8                 | 1  | 10               | ..                                    | 4  | 10                                | 188              | 199                   |                             |
| 9                 | 1  | 7                | ..                                    | 11   | 23                                | 117              | 140                   |                             |
| 10                | 1  | 3                | ..                                    | 9  | 24                                | 101              | 125                   |                             |
| 11                | 2  | 8                | ..                                    | 4  | ..                                | 160              | 160                   |                             |
| 12                | 1  | 3                | ..                                    | ..   | 108                               | 19               | 127                   |                             |
| 13                | 1  | 5                | ..                                    | ..   | 25                                | 125              | 150                   |                             |
| 14                | 1  | 1 <sup>1/2</sup> | 15                                    | 12   | ..                                | 24               | 75                    | 99                          |
| 15                | 1  | 1 <sup>1/2</sup> | 15                                    | 12   | ..                                | 100              | 16                    | 116                         |
| 16                | 1  | 8                | ..                                    | 2  | 24                                | 109              | d133                  |                             |
| 17                | .. | 3                | ..                                    | 8  | 6                                 | 121              | e127                  |                             |
| 18                | .. | 1                | ..                                    | ..   | 34                                | f34              |                       |                             |
| 19                | 1  | 1 <sup>1/2</sup> | 6                                     | 4  | 35                                | 5                | g40                   |                             |
| 20                | 1  | 4                | 2                                     | 2  | 40                                | 147              | h187                  |                             |
| 21                | 1  | 4                | ..                                    | ..   | 44                                | 134              | 178                   |                             |
| 22                | 1  | 9                | ..                                    | 13   | 12                                | 153              | i165                  |                             |
| 23                | 2  | 9                | ..                                    | 5  | ..                                | 180              | j180                  |                             |
| 24                | .. | 12               | ..                                    | 11   | 38                                | 146              | k184                  |                             |
| 25                | 1  | 2                | 1                                     | ..   | 61                                | 16               | 77                    |                             |
| 26                | 1  | 4                | 2                                     | ..   | ..                                | 106              | 106                   |                             |
| 27                | 3  | 4                | ..                                    | ..   | 24                                | 136              | 160                   |                             |
| 28                | 1  | 12               | ..                                    | 2  | 159                               | 32               | 191                   |                             |
| 29                | .. | 1 <sup>1/2</sup> | 3                                     | ..   | 5                                 | 38               | l43                   |                             |
| 30                | 1  | 2                | 4                                     | 29   | 80                                | 109              | m109                  |                             |
| Totals.           |    | 166              | ..                                    | 944  | 3109                              | 4053             | ..                    |                             |

REFERENCES.—*a*, cast one swarm; *b*, solo June 7; *c*, daughter of imported queen; *d*, cast two swarms; *e*, young queen, laying; *f*, virgin queen; *g*, east swarm, Aug. 9th; *h*, hybrid; *i*, hybrid; *j*, daughter of imported queen; *k*, imported queen; *l*, virgin queen, June 1st; *m*, hybrid.

The above-named 30 colonies were all I had left of 50 colonies last fall. Their pitiable condition on June 1, as shown in the table, was due to the extreme wet and cold in March, April and May.

On May 27 I do not think there was a pound of honey in my apiary. The last feeding was done on May 28. The weather, through June and the first half of July, was extremely wet and cool for the time of year. From June 1 to Oct. 1 rain fell on 35 different days.

We have 53 colonies now, with ample provision for winter, and the total amount of honey taken is 4,700 lbs.; 1,097 lbs. of it is comb.

Reckoning nine frames to the hive (the size I use), and allowing for the

nuclei that was sold June 7, I had, on June 1, the bees for 18 full colonies. This gives 261 lbs to the colony, or a little over 28 $\frac{1}{2}$  lbs. to the frame. Some may object to reckoning in this way, on account of the extra queens; but I know of no other way to come at it fairly, and I think, too, that the disadvantage of having the bees in so many hives more than offsets the advantage of the extra queens.

Our bees are a strain of Italians, procured in August, 1878, of Samuel Replogle, Hagerstown, Ind. I have bred them for stripes, industry, hardiness, prolificness, docility and size.

Judging from what I have read in the journals, my bees will not compare in prolificness and color with the Cyprians or Syrians, and some strains of Italian will surpass them in these respects, but for industry, hardiness, docility and size, I do not think I could get better bees anywhere.

As for comb building, my bees, like other Italians, build an excess of drone comb, but for comb honey I see no difference in the whiteness of the comb of that which they build, and that built by black or hybrid bees. In order to satisfy the readers of the BEE JOURNAL, as well as myself, I will forward a sample of my comb honey to the editor, and he may decide for us all in this respect. The greater part of our comb honey was taken off in September, of which the sample is a specimen.

Bryant, Ill.

[The sample of comb honey was received in excellent condition—not a drop of leakage—and presents a very nice appearance. The cappings are exceedingly white, having more of the appearance of that done by black rather than Italian bees. The honey is light, but not the lightest; one of the combs is not fastened to the sides or bottom of the section, as well as we may desire, but on the whole it would grade No. 1 as to marketability.

—Ep.]

For the American Bee Journal.

### Development of "The Coming Bee."

E. L. BRIGGS.

The public bee fraternity are always interested in anything that looks like the improvement of the race of honey gatherers in America, or elsewhere.

So I wish to report progress; and offer another prize for the best Italian queen out of eight; to be sent to me at any time before the 1st of July, 1883; to be not over 18 months old; home-bred or imported.

I hereby offer \$25 for the best queen in eight, to be sent to me, by as many different breeders, on or before the 1st of July, A. D. 1883; in addition to the usual price for each queen sent as a contestant for the prize; subject to the following conditions: She must be better than either my Wilson Queen, No. 4; or my Lake Queen, No. 3; or my Henderson Queen, No. 6; in one, or

more, of the five following particulars, viz.:

1. She must be larger in size and produce larger workers and drones than either of the above prize queens.

2. She and her offspring, workers, drones, and queens, must be as bright, or brighter yellow than the above.

3. She, and her worker offspring, must be as gentle, or more so, to handle; clinging to the combs when lifted out, with the same or greater tenacity.

4. Her worker progeny must manifest a greater industry in gathering honey, and filling surplus boxes, than either of the above.

5. She must be the most prolific as a breeder, keeping her colony strongest in numbers.

I reserve to myself the right: 1. To accept the breeder who offers to become a contestant, or reject his offer, at my own option. 2. To keep any one of the queens forwarded, by paying the catalogue price for the same, or one of my young prize queens, in exchange, as the sender may elect, or, of returning her to the sender, if she does not come up to the standard of those I already have. 3. The sender must pay the expressage to this place; and in all cases, when she is returned, both ways. On the first Thursday in next September the prize to be awarded by a committee of three or five breeders to be named by Thos. G. Newman, editor of the AMERICAN BEE-JOURNAL. At which time I will here, and now, invite a convention of bee-keepers, and others, to assemble and witness the award, and to discuss the interests of the cause generally; for a couple of days, or more.

I make this offer, not in the way of a banter, but in good faith. For I believe that every now and then there will appear a very superior queen, which the producer would perhaps ship off, at the ordinary price, and her superiority would be lost in mingling with ordinary stock. But by a careful selection he not only insures himself the selling price, which he charges, but he stands a chance of getting \$25, in addition. And I make it further, because I am determined, if money, time, patience, and careful selection will do it, to breed the honey-bee up to the highest possible state of perfection. And I am confident that it is best for the whole bee-keeping fraternity that there should be "one best apiary" where stock is bred for perfection; and where it can be procured in its highest purity at any time.

I flatter myself that among the fifty or more tested young queens, now heading as many colonies in my apiary, bred from my three prize mothers of last year, I could select several which would take the prize I offer. And, doubtless, there are other breeders who can do the same. Out of our one hundred other colonies, there are not five, I think, which contain bees with less than three yellow bands. They have all been queenened by imported stock, or the best of home-bred mothers. And as to their honey-making qualities, they have filled nearly every receptacle which I have given them to fill, this summer.

Come, fellow workmen, let us correspond, interchange, compare notes, and work together for the "Coming Bee." To this end, under like circumstances, I would like to compete for a similar prize in any part of the country. Let some one try his hand with other races, if he thinks they will prove better producers; whether it be with brown, black, two-banded, or one-banded, Cyprian, Holy-Land, Austrian or Egyptian; there is room enough for all.

But I, with many others, am content with the beautiful, golden hued, gentle, industrious, and prolific Italians. When coming in from the fields of clover and linden, laden with golden drops of nectar, as they drop upon the alighting-board, like a shower of golden drops, I know that it is not the poetry of the matter alone which delights me, but the golden coins as well, which their produce brings.

Wilton Junction, Iowa, Oct. 21, 1882.

For the American Bee Journal.

#### Bee Notes from Iowa.

WM. PAXTON.

The busy bee is at rest and the season is at hand to compare notes and prepare for another season's work.

My small report went in with south-east Dakota, with which my location and the flora are nearest allied, although I live on the east bank of the Sioux.

I commenced the spring with four colonies, one strong and three little more than nuclei. I took 400 lbs. of extracted honey and increased to nine, by division; I will not say in good condition for winter, because I succeeded in getting a live queen so late that I expect to find unfertilized queens, next spring. Probably Good's food for queen cages would have saved the shipper two valuable queens, and me much valuable time. I fed my bees up to July.

Some years ago while residing near Manchester, Delaware Co., Iowa, I made a trip west, leaving home about Aug. 20th. At Fort Dodge I found bees just building up, and on returning, in September, that the first swarm had issued Aug. 28 and they were still swarming and at work in the supers. This was so unusual to me that I inquired whence came the nectar, and I was answered goldenrod; but my informant was unable to point out the plant with which at that time I was not familiar.

My bees had closed the season's work and killed the drones. I never looked for surplus from fall bloom. I wrote to a friend, suggesting the moving a part of his bees and mine for another harvest, but he did not look upon the proposal with favor. Yet I could not rid my mind of the practicability of extending the season by change of location, and especially where a short remove, as in this State, will carry you from the richest fields of clover and forests of linden to the best fall pasture.

Had business matters favored it was my plan to spend the coming winter

in the South—buy, transfer and handle bees past the best honey flow, and ship North by carload, not caring to reach this point before July.

Will some readers of the BEE JOURNAL, located where bees are comparatively idle consumers, at a season not later than the last of June, correspond with me on the subject.

Controlling fertilization is among the important unsettled problems. D. A. Jones on his isolated island can test the pure races and crosses, beyond any guess work, but the high latitude and chilly lake breeze make the season short, and the surrounding water must make the loss of queens heavy. In my opinion it is only on a prairie, comparatively new, without tree, stub, or stump, to harbor wild bees, that queens can be bred to the best advantage, and fertilization absolutely controlled, without confinement. It is only a matter of moving your nuclei with the desired drones to a safe distance from tame bees.

The dollar queen has come in for a good share of abuse during the season. Even the lazy drone has found its advocate, while scarcely a voice is raised for the cheap queen. It may be true that the drone gives heat to the young brood, but to me it seems very like feeding a dozen idle loafers to warm a room by animal heat. Other drones may build comb, I believe mine do not.

That some breeders of dollar queens are honorable men, breeding and sending out just such queens as they would use at home, you are all forced to admit; the dollar queen, then, is only such, because untested; breeders think they can afford them for that price. I want to know that the strain is of the best, with good chances for pure mating, and for obvious reasons I will do my own testing, and believe I can do so cheaper than the breeder can.

I am not a dealer in bee-keepers' supplies; never raised a queen, but for my own use or to give away, and could not give time for the necessary correspondence; but to him who has had the courage to advertise, and by fair dealing has worked up a trade, I would say, if he has a choice strain he wishes to keep pure, some one could undertake to breed and test for him, at wholesale only, for one dollar, because to do so he would only have to take a queen for shipping from a full colony and replace her by one from nuclei, with full assurance that twenty-one days would show her brood pure as the one she replaced.

Mr. Heddon has placed before us his dark, long, red-clover bees, with such candor and force, that I am almost a convert to the principle: "Handsome is, that handsome does."

What untrained eye would look for beauty in the Merino, his coarse, ugly horn, wrinkled, surly face, and gaunt, ill-shaped body, several sizes too small for his dirty coat? Yet his owner could see beauty in "Gold Drop," when every ounce of blood in his veins was worth its weight in gold, and he could see additional beauty in each fold of his loose, dirty, wool-covered skin—yet, the intrinsic value being

equal, I must confess a preference for the compact Down, or the square, stately Cotswold, with snow-white fleece in graceful ringlets.

The interesting test of Prof. Cook and others, shows the tongue of the Italian longer than the black, the Cyprian still longer, and the Syrian equal to either, in the yellow; then by breeding in the good points, and out the vicious, may we not hope to find all the good qualities, that, by careful selection, Mr. Heddon has found in his mixture of yellow and black?

Mr. Jones says the best in his yard is a cross of Italian with Syrian; his chances for observation are large and his opinion worthy of consideration, and I, for one, fondly hope to find the advent of the new races result in improvement worthy of the bold enterprise of the man who at great cost has given them to us.

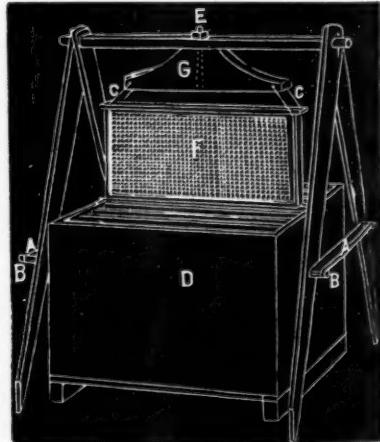
Beloit, Iowa, Nov. 7, 1882.

For the American Bee Journal.

#### Revolving Frame Holder.

N. H. BARNHILL.

I send you a rough sketch of a contrivance I use, and find of great assistance while examining frames, and introducing queens. It consists of a frame somewhat similar to a clothes horse, with a revolving head, to the end of which two wires are attached, which can be expanded to suit any frame. The revolving head enables you to examine both sides, also to clip



the queen's wings, without disturbing her, by the use of a pair of spring scissors, as used in knives, etc. I could not get on without it, unless I had some other assistance.

A A are strips of cloth, tacked to pins to prevent spreading, and are handy for tools to hang on.

B B, pins of wood to hold the cloth.

C C are wires to hold the frames, by slipping them over the end bars.

D, the hive.

E, the bolt to hold the wooden revolving head to the upper bar of the frame holder.

F, the frame in position.

G, revolving head, containing wires to hold the frames.

Evelyn, Ga., Oct. 14, 1882.



### Local Convention Directory.

| 1882. Time and Place of Meeting.               |   |
|--|---|
| Nov. 29-30, Western Michigan, at Grand Rapids. | Wm. M. S. Dodge, Sec.                   |
| 6-7, Michigan State, at Kalamazoo.             | T. F. Bingham, Sec., Abronia, Mich.     |
| <b>1883.</b>                                   |   |
| Jan. 16.—Eastern N. Y., at Albany, N. Y.       | E. Quakenbush, Sec., Barneviller, N. Y. |
| 11, Nebraska State, at Wahoo, Neb.             | Geo. M. Hawley, Sec.                    |
| 16-18, Northeastern, at Syracuse, N. Y.        | G. W. House, Fayetteville, N. Y.        |
| 19, 20.—Mahoning Valley, at Berlin Center, O.  | L. Carson, Pres.                        |
| Feb. 3.—Northern Ohio, at Norwalk, O.          |   |
| April 5.—Utah, at Salt Lake City.              | E. Stevenson, Sec.                      |
| —, —, Texas State Convention, at McKinney.     | Dr. W. R. Howard, Sec.                  |
| Oct. 17, 18.—Northwestern, at Chicago, Ill.    | Thomas G. Newman, Sec.                  |

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

For the American Bee Journal.

### West Texas Bee-Keepers' Association.

A number of bee-keepers from different parts of the State met at Bower's Hall, Luling, Texas, on Nov. 1, 1882, for the purpose of permanently organizing the West Texas Bee-Keepers' Association. The President called the meeting to order and stated the object of the meeting; after which a constitution and by-laws were adopted. Then followed a number of very interesting discussions.

A resolution was passed constituting the President and Secretary a committee to communicate with the various Fair Associations for the purpose of getting a department of agriculture.

The Secretary was also instructed to correspond with the honey dealers of Europe, that we may get a direct European market for our surplus products.

The meeting then adjourned to meet in San Antonio, about the 20th of Oct., 1883, or during the West Texas Fair.

The following gentlemen were elected as officers for the coming year: President, J. S. Tadlock; Vice President, Capt. W. L. Foster; Secretary, Thos. Balcomb; Treasurer, Rev. S. C. Orchard. THOS. BALCOMB, Sec. Luling, Texas, Nov. 8, 1882.

The annual meeting of the Mahoning Valley Bee-Keepers' Association will be held at Berlin Center, Mahoning Co., O., in the town hall on Friday and Saturday the 19th and 20th of January, 1883. All bee-keepers are invited to attend and send essays, papers, implements, or any thing of interest to the fraternity. A full attendance is requested of all who are interested. In fact, the meetings will be so interesting that you cannot afford to miss them. We expect a lecturer from abroad on the evening of the 19th. L. CARSON, Pres.

### Read before the Union, Ky., Convention. Queen Rearing and Honey Producing.

J. H. READ.

The apiarist who produces honey only, need not spend the whole of his time in the business, hence he may add some other business to that of honey producing with profit. In this respect the business of honey producing differs from the business of queen rearing. Of course my remarks are to have a general application, for I believe there are many locations where it will not pay to attempt to produce honey at a profit; am I right? yet, I am convinced that there are many localities where honey can be produced at a profit, and the business safely made a specialty.

In breeding queens as a business of profit there are many drawbacks. The breeder must sell queens from his colonies early in the spring, to satisfy his customers, and he sometimes sustains loss—even the loss of a colony in filling these early orders. His queens are sometimes lost or die in transit, and he has sometimes to return money to dissatisfied customers. All these things have to be endured by the queen breeder. It is gratifying, however, to have on hand nice queens for sale, and to have orders for them from all over the country. It is not only pleasant to receive the cash for them, but it is a pleasure to send them away to please customers, and to introduce the finest stock everywhere. I have been breeding queens for years, and yet, had I to commence anew, I think I would be a honey-producer. Orleans, Ind.

The Nebraska State Bee-Keepers' Association, will hold its annual session in Wahoo, Saunders county, Neb., commencing Thursday, Jan. 11th, 1883. Arrangements have been made with the railroads to secure 1½ fare for the round trip. The Saunders county Bee-Keepers' Association will furnish entertainment free to all visiting apiarists. Bee-keepers from neighboring States will be welcomed.

T. L. VONDORN, Pres.  
GEO. M. HAWLEY, Sec.

The Western Michigan Bee-Keepers' Association will meet at Supervisors' Hall, in the city of Grand Rapids, on Wednesday and Thursday, Nov. 29th and 30th, 1882. The co-operation of all bee-keepers of this section is desired.

W. M. M. S. DODGE, Sec.

The 17th annual convention of the Michigan State Bee-Keepers' Association will be held in Kalamazoo, Dec. 6 and 7, 1882. All interested are cordially invited to participate in the discussions—which will embrace the live issues of the Apiculture of to-day. Thomas G. Newman, A. I. Root, D. A. Jones, Prof. A. J. Cook, and many other distinguished apiculturists are expected to be present. Low rates of board at hotels have been secured.

T. F. BINGHAM, Sec., Abronia, Mich.



**A Home Market.**—I commenced with 10 colonies last spring; increased to 26 by natural swarming. I obtained 1,100 lbs. of comb honey, in 2 lb. sections, and sold it at home, from 15 to 20 cts. per pound. My bees are in good condition to go into winter quarters. I winter them in the cellar. I think this is a good location for bees, as there are many honey-producing plants; although there are not many bee-keepers in the country. I am taking seven papers, and if I were compelled to do with only one, that one would be the AMERICAN BEE JOURNAL.

D. M. DIERDORFF.

Waterloo, Iowa, Nov. 11, 1882.

**That 1,000 Pounds of Honey from One Colony.**—Last year you put me down as an Ohio man in your report, and I think I see another little mistake this year. Dr. J. E. Lay tells me he thinks the J. C. Carroll of Dallas Co., Texas, who reported to the National Bee-Keepers' Convention that he had a colony of Cyprian bees that had gathered 1,000 lbs. of honey during the season, was myself. I made the statement that I had obtained 800 lbs. of surplus, 115 lbs. now in the hive and about 50 lbs. wasted by evaporation, as the loss was from two to five pounds during the horsemint flow. (I did not keep a daily memoranda of the colony, only now and then weighing, to see if any loss would occur during night, which was as above stated.) And I said I thought they had consumed not less than fifty pounds in brood rearing, making over 1,000 lbs. brought in by this colony. My bees are gathering honey from cotton, similar to the horsemint in June. Drones by thousands are flying and I have a nice lot of queen cells ready to hatch. The thermometer stood at 90° F. at noon yesterday, and at 10 o'clock p.m., yesterday, it stood at 76° F. The bees were roaring at night, like summer time. No frost, and not even a cold spell yet. Send on your bees, Mr. Harrington, before the blizzards set in; you can have part of my range. The horsemint is up, a fine stand, three to six inches high. Look out for another big crop. B. F. CARROLL. Dresden, Navarro Co., Texas.

[We gave the name just as it came to us in the report of the National Convention, but it is evident that it meant you. The mistake last year, of giving Ohio as your address, was our own, which we regret we did not discover in time to correct it then.—ED.]

**Cold Wave.**—The weather was warm here last week. The cold wave which struck Chicago last Sunday, reached here before daylight this morning. It is not cold, however, and it is quite pleasant.

HENRY ALLEY.

Wenham, Mass., Nov. 14, 1882.

**And Still Sweet Clover is Blooming.**—Please find enclosed some sweet clover that is in full bloom yet; it came up on one side of our house this spring and the bees were found working on it on Nov. 11, and now the ground is covered with snow 3 inches deep, so you see it blossoms with us until winter. Bees have done very well here for such a bad season. I bought one colony, last July, of E. T. Flanagan and have increased to three now, in good condition for winter. I bought 4 colonies of blacks this fall and sent to W. Z. Hutchinson for a queen and introduced her into one of the colonies of blacks. Success to the Weekly BEE JOURNAL. I shall give you my plan for wintering bees after a while, and see what you think of it. I never have lost one colony in wintering yet.

G. L. PRAY.

Petoskey, Mich.

[The fragrant little blossom is received and gives another proof of its hardihood.—ED.]

**Bee-keeping in Canada.**—I often wonder what is called good work for a colony of bees to do in a certain time. One of my colonies of brown bees gathered last season 34 lbs. in 3 days, and threw a large swarm the day before I commenced the test. The hive has 3,000 cubic inches. It will not pay to double up the bees in the spring of a good season, though this is not the common advice and rule. Last year I got 75 lbs. of honey from one colony, with only 100 bees on May 1. The same queen has done well two seasons since. I believe many good queens lose their heads when they are not always to blame; if she is not producing drones, give her a chance. Pack the hive inside, not outside, leaving only three frames at most, and put a few sheets of paper on top of the frames to keep the heat in and drive it down. The golden willow is the only thing in Canada that gives honey before the dandelions. Bees work on it here until quite dark in good weather; it fairly rains honey and can be seen easily with the naked eye. If you wish to plant it, and have a creek or permanent lane on your farm, with an ax cut off branches 4 to 6 feet long, any size, in the spring, and drive them where wanted; if put along a creek they make a good shade for cattle, and in three years they will support a wire fence. When my bees are getting honey I like to know how much, what from, and what kind of day. As to Bokhara clover not growing, it will grow anywhere, if there is moisture to sprout it and keep it alive until it gets hold of the ground, the same as other clover and timothy. I hoed the seed in, in rows, between mangolds, and it did well; I harrowed it in with oats, on June 1, with last stroke of harrow; it was two feet high before I cut my oats. It has given the barn a fine smell, and the bees have haunted it all the fall, in vain, for honey. I find onions are good to use in doubling bees; I have tried them and without loss. Honey is an excellent medicine for the eyes, it is unequalled for inflammation. As to whether bee-keep-

ing pays, I will let the bees speak for themselves. Last season there were only four colonies to make profits in the good year. They gathered 126 lbs. on an average, having come through two years without loss. The willow and apple trees were killed while in bloom, and we had to kill the young bees. The expenditure in two years for bees was \$80, and the receipts \$480.

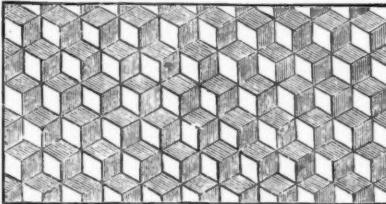
CHAS. MITCHELL.

Molesworth, Ont.

**Comb Foundation.**—What is comb foundation, and how is it made? Please describe it in the BEE JOURNAL.

JOHN KRAINIK.

[We have repeatedly described comb foundation and its manufacture; and will now content ourselves with saying that comb foundation consists of sheets of beeswax, formed by dipping wooden plates into melted wax, and, upon being rolled through a machine, these sheets have indentations made



COMB FOUNDATION.

on both sides, that form the foundation of cells, which the bees readily accept and work out into comb.

It would be tedious to review all the various styles of foundation presented to bee-keepers since it was first introduced in America. We have had foundation with triangular-shaped cells, with flat-bottomed cells, with high side-walls, and with no walls at all; with linen, cotton, wood, paper, tin-foil and woven-wire for a base; while, latterly, we have had foundation with fine wires imbedded in it, and frames of foundation with wires pressed therein. Experience is demonstrating, however, that a medium heavy sheet—say, four-and-a-half to five feet per pound, with a thin base or septum, and heavy prominent side-walls or lines, is the most desirable for economy in the use of wax, and rapid in comb-building by the bees.—ED.]

**My Little Report.**—I had 17 Italian colonies in the fall of 1881. I wintered them in American hives, modified, but using the American frame. They wintered in the cellar. I had 17 in the spring of 1882; sold one, and obtained 1,600 lbs. of extracted and 200 lbs. of comb honey, in 1 and 2 lb. sections; increased to 23 colonies, which are now in good condition for wintering. In justice to my report, I should say that owing to the severe drouth last

season, 5 of my colonies were mere nuclei, which, with queen, were wintered on 4 frames, and they not covered with bees. Some of my neighbors have obtained as high an average as 150 lbs. of honey to the colony, in spring, with a larger increase than I have had. Bee culture will receive quite a boom in this locality another year, on account of the large yield this year.

M. LEIDY.

Carthage, Mo., Nov. 13, 1882.

**Packing My Bees.**—In a few days I shall pack my bees in boxes, each in a single box, with 5 inches of sawdust all around, like Mr. Heddon does. I have 35 colonies of Italians. Three days ago I noticed that my best colony (which had given 200 lbs. of comb honey) was very uneasy, and carrying out dead bees; in the night they were still uneasy, but yesterday they were more peaceful. To-day they are all alarmed again, so I opened the hive and found that the middle comb (drone comb) which I placed there 3 weeks ago, having sealed honey for winter use, was nearly emptied of honey, and to my astonishment was full of eggs, from 12 to 20 eggs in each cell, on both sides, and two queen cells were started, the bees acting like they would when swarming. I took out the comb and gave them another with sealed spring honey. Please explain the cause of this. G. DAMKOHLER.

Clarence, Mo., Nov. 3, 1882.

[The colony had become queenless, and while in a state of commotion, consequent upon the bees learning their condition, it was also attacked by robber bees. If you had watched closely you would have seen that the bees went away filled with honey, which is always a very suspicious circumstance. The commotion at night also shows that the colony was invaded by robbers. Or the colony might have been invaded by robbers and in the commotion caused, the queen may have been killed. The 12 to 20 eggs in a cell were the result of fertile workers, an unnatural development consequent upon the loss of the queen. Had you removed the colony to the cellar for a few days, or contracted the entrance so as to admit only one bee at a time, or thrown some grass loosely over the entrance you would have aided the robbed colony, and prevented the second attack. To give them another queen, or unite some weak colony with it, is now the best thing to do, as it is very late to repair the loss.—ED.]

**Small Wire Worms in Pollen.**—I would like to enquire if anyone has been troubled with small wire worms, that are hatched in the pollen, while it is packed in cells around the brood nest. It is great injury to the brood. They are from  $\frac{1}{4}$  to  $\frac{1}{2}$  inch in length, and work along the centre of the comb

and attack the larvae before it is fully capped over, and pushes it out of the cells for the bees to carry out of the hive. They work for months and do not increase in strength. I have had 2 colonies this season invaded by these worms, and one of my neighbors also had colonies invaded by them. I took the bees from one of these hives and gave them new combs to start them anew. Being late in the season, both I and my neighbor put a sulphur match to the other hives, and thus we got rid of them for the present. My theory is this: In breeding time I noticed a quantity of flies at the entrance of the hive, and saw the bees pounce on them and drive them away, thus showing them to be enemies. What were those flies after, if not to deposit eggs in the hive, where the heat of the bees will hatch them out? They are very different from the moth, which I can find, if on the combs; their heads are of a different color, and their bodies are whiter. If any one has noticed these flies or worms I hope to hear from them in the BEE JOURNAL.

ROBERT CORBET.  
Manhattan, Kansas, Nov. 3, 1882.

**Moving Bees, etc.**—I enclose some plants for name, and please state where they grow extensively, for they are very scarce here. No. 1 is 2 feet in height, and is very thick with bloom and branches. It commences to bloom in July and is blooming still. No. 2 grows from 5 to 6 feet high and blossoms same as No. 1. No. 3 grows from 4 to 6 feet high and blooms from September till frost. I want to ship my bees 150 miles. Shall I ship them by freight or express—now or next spring? Will it injure the brood to ship them in the spring?

SYLVESTER MARSHALL.  
Prattsvork, O., Sept. 28, 1882.

[No. 1 belongs to the aster family, and abounds in low, rich bottom lands all through the Northern States. It is now also spreading in the South.

No. 2 is the *melilotus alba* or sweet clover, and will grow anywhere on any soil, and in any climate.

No. 3 is goldenrod and is also found on the low lands and river bottoms. They are all good honey producers.

The best time for shipping bees any considerable distance, is in April, or quite early in May, before the combs are too heavy with brood; but with proper care in preparing them and ordinary usage in handling, they may be shipped at any time with comparative safety except in very cold weather.

The first work is to go through the hives and extract all the uncapped honey, as the least daubing will prove fatal to the bees; then procure a block one inch square, and as long as the hive is wide, in this cut notches and tack in the bottom of the hive, in which to place the frames to keep them steady; now select the new

combs and those heavy with brood or sealed honey, secure them well in the frames with strip-binders, and place in the hive; tack the ends of the frames firmly to the rabbets on which they rest; dip the blanket in clean water, lightly wring, fold about six thicknesses, and lay on the front ends of the frames. If the hive has no portico, leave off the cover, and use wire cloth instead, nailing on top of that, three one-inch strips, two inches wide—one across the center, the others across each end, to insure ventilation when piled on each other. Now tack wire cloth over the entrance, and your bees are ready for shipment.

If the hive has a portico, prepare in the same manner as above, except to bore a one-and-a-half inch hole in each side of the brood chamber, and also in the cover, which will be used in place of the wire cloth over the frames; the holes to be covered inside and outside wire cloth to admit of ventilation. Leave the entrance open full size, but cover the entire portico securely with wire cloth, leaving free access to it from the interior of the hive; care must be taken, however, to bore a one-and-a-half inch hole under the roof-board of the portico, and left open, to allow free ingress to the interior of the hive, as the entrance beneath may become choked up, and the cluster of bees, with the queen, die of starvation through inability to get at the honey in the hive. Hives made with porticoes are much better for shipping bees, for it allows them to drag out the dead, cleanse the hive, and, to a great extent, prevent dysentery. Prepared in this manner, full colonies may be shipped at all seasons, from May 1st to Aug. 10th, with perfect success. They should be sent by freight; the expressage will cost too much, and they will be no more carefully handled.—ED.]

**Quick Work.**—I get the quickest return from an advertisement in the AMERICAN BEE JOURNAL of any paper I ever advertised in. The BEE JOURNAL is mailed at the office on Tuesday: it reaches me on Friday, and on Saturday, the day after the BEE JOURNAL comes to hand, I frequently get calls for my circular; these calls come from Pennsylvania and New York States. HENRY ALLEY.  
Wenham, Mass., Nov. 14, 1882.

We carefully mail the BEE JOURNAL to every subscriber, but should any be lost in the mails we will cheerfully send another, if notified before all the edition is exhausted.

### Honey and Beeswax Market.

OFFICE OF AMERICAN BEE JOURNAL,  
Monday, 10 a. m., November 20, 1882.

The following are the latest quotations for honey and beeswax received up to this hour:

#### Quotations of Cash Buyers.

##### CHICAGO.

**HONEY**—The supply of extracted honey is fully up to the demand. My quotations are: 6 $\frac{1}{2}$ c. for dark and 8 $\frac{1}{2}$ c. for light, delivered here.

**BEESWAX**—It is quite scarce. I am paying 27c. for good yellow wax, on arrival; dark and off colors, 17@22c.

AL. H. NEWMAN, 923 W. Madison St.

##### CINCINNATI.

**HONEY**—The market for extracted honey is very satisfactory. We have received within the last three weeks more than 200 bbls., principally from Louisiana, Mississippi and Florida, and the demand exceeds our experience and expectations. We have sold more than ever at this time of the year. Florida furnishes a honey which equals our northern clover, and excels it. Southern honey I have had so far. There is some call for comb honey, but we have had no arrivals yet of a choice article. Comb honey brings 16@20c. on arrival; extracted, 7@10c. BEESWAX—Firm at 26@28c. per lb. CHAS. F. MUTH.

#### Quotations of Commission Merchants.

##### CHICAGO.

**HONEY**—The demand increases with the cool weather, but not sufficiently fast to keep pace with receipts, which now accumulate, as it is time to get the surplus into market. Prices remain unchanged with perhaps tendency downward, owing to many consignors desiring to realize quickly.

We quote: white comb, in small sections, 18@20c. Fine, well-filled, 1 lb. sections bring the outside price. Dark comb honey, little demand, 15@16c. Light honey, in larger boxes, 12@16c. Extracted—white clover, 9 $\frac{1}{2}$ @10c.; dark, 8 $\frac{1}{2}$ c. In barrels and half-barrels. Kegs will bring but a small advance, if any, above half-barrels.

**BEESWAX**—Very scarce. Choice Yellow, 30c.; dark to fair, 20@24c.

R. A. BURNETT, 165 South Water St.

##### SAN FRANCISCO.

**HONEY**—Stocks are abundant of medium and dark grades, and the demand for such is light. A sale of 150 cases extra C comb was made Wednesday at 14c.

White comb, 18@20c; dark to good, 12@15c; extracted, choice to extra white, 9@10c.; dark and candied, 7@8 $\frac{1}{2}$ c.

BEESWAX—We quote 25@28c.

STEARNS & SMITH, 423 Front Street.

##### ST. LOUIS.

**HONEY**—Plentiful and slow. We quote, in lots, comb at 15@17c; strained at 6@7c.; extracted at 9@10c.

**BEESWAX**—Prime bright quotable at 26@27c. R. C. GREER & CO., 117 N. Main Street.

##### CLEVELAND.

**HONEY**—There has been no change in honey the past week. No. 1 white, in 1 lb. sections, continues in good demand at 21@22c. per pound. No. 1 in 2 lb. sections, is also in good request at 19@20c. Second grade, less active, at 16@18c. per lb. less. Extracted, in all shapes, was dull and very little sale. Some Louisiana honey, rather dark, in barrels, was sold at 9c.

BEESWAX—Prime quality, 25@28c.

A. C. KENDEL, 115 Ontario Street.

##### NEW YORK.

**HONEY**—There is a fair demand for prime lots of honey, and choice is held firmly, with occasional sales of fancy a trifle higher than we quote.

We quote: White clover, fancy, small boxes, 19@22c.; white clover, fair to good, 16@18c.; buckwheat, 13@16c.; extracted clover, 10@13c.; extracted buckwheat, 9@10c.

BEESWAX—There is only a moderate movement of wax, but prices hold about steady at 20@30c. for Western, and 30@31c. for Southern.

Western, pure, 29@30c.; Southern, pure, 30@31c. D. W. QUINBY, 103 Park Place.

##### BOSTON.

**HONEY**—Sells very readily in 1 lb. sections at 22@25c. for best white, and 20@22c. for 1 $\frac{1}{2}$  to 2 lb. Boxes containing  $\frac{1}{2}$  pound, 30c. per pound.

Extracted is selling very slowly at 12@14c.

BEESWAX—25@28c.

CROCKER & BLAKE, 57 Chatham Street.

**THE AMERICAN  
BEE JOURNAL**

**ADVERTISING RATES.**

**20c. per agate line of space, each insertion.**

A line of Agate type will contain about eight words; fourteen lines will occupy 1 inch of space. Transient Advertisements payable in advance. Special Notices, 50 cents per line.

**DISCOUNTS** will be given on advertisements published WEEKLY as follows, if the whole is paid in advance:

|                        |                        |
|------------------------|------------------------|
| For 4 weeks.....       | 10 per cent. discount. |
| " 8 "                  | 20 "                   |
| " 13 " (3 months)..... | 30 "                   |
| " 26 " (6 months)..... | 40 "                   |
| " 39 " (9 months)..... | 50 "                   |
| " 52 " (1 year).....   | 60 "                   |

Discount, for 1 year, in the MONTHLY alone, 25 per cent.—6 months, 10 per cent.—3 months, 5 per cent.—if wholly paid in advance.

Discount, for 1 year, in the SEMI-MONTHLY alone, 40 per cent.—6 months, 20 per cent.—3 months, 10 per cent.—if wholly paid in advance.

Advertisements withdrawn before the expiration of the contract, will be charged the full rate for the time the advertisement is inserted.

**THOMAS G. NEWMAN,**

925 West Madison Street, Chicago, Ill.

**Special Notices.**

☞ A few of our subscribers are in arrears for the present year—having requested us to continue, and they would pay soon. Will all such please take this as a request to send on the two dollars with a renewal for next year, if possible.

☞ The American Express Company money order system is the cheapest, safest and most convenient way of remitting small sums of money. Their rates for \$1 to \$5 are 5 cents; over \$5 to \$10, 8 cents. They can be purchased at any point where the company have an office, except Canada, and can be made payable at any one of the company's 4,000 offices.

For safety, when sending money to this office get either a post office or express money order, a bank draft on New York or Chicago, or register the letter. Postage stamps of any kind may be sent for amounts less than one dollar. Local checks are subject to a discount of 25 cents at Chicago banks.

**Preparation of Honey for the Market**, including the production and care of both comb and extracted honey, instructions on the exhibition of bees and honey at Fairs, etc. This is a new 10 cent pamphlet, of 32 pages.

**Honey as Food and Medicine.**

A new edition, revised and enlarged, the new pages being devoted to new Recipes for Honey Medicines, all kinds of cooking in which honey is used, and healthful and pleasant beverages.

We have put the price of them low to encourage bee-keepers to scatter them far and wide. Single copy 6 cents, postpaid; per dozen, 50 cents; per hundred, \$4.00. On orders of 100 or more, we print, if desired, on the cover-page, "Presented by," etc., (giving the name and address of the bee-keeper who scatters them). This alone will pay him for all his trouble and expense—enabling him to dispose of his honey at home, at a good profit.

**The Apiary Register.**

All who intend to be systematic in their work in the apiary, should get a copy and commence to use it.

|                                  |        |
|----------------------------------|--------|
| For 50 colonies (120 pages)..... | \$1 00 |
| " 100 colonies (220 pages).....  | 1 50   |
| " 200 colonies (420 pages).....  | 2 00   |

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable ones.

**CLUBBING LIST.**

We supply the **AMERICAN BEE JOURNAL** and any of the following periodicals, one year, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage is prepaid by the publishers.

| Publishers' Price. Club                        |        |
|--|--------|
| The Weekly Bee Journal,.....                   | \$2 00 |
| and Gleanings in Bee-Culture (A.I.Root) 3 00.. | 2 75   |
| Bee-Keepers' Magazine (A.J.King) 3 00..        | 2 60   |
| Bee-Keepers' Exch'ng (Houk & Peet) 3 00..      | 2 80   |
| Bee-Keepers' Guide (A.G.Hill).....             | 2 50.. |
| Kansas Bee-keeper.....                         | 2 40   |
| The 6 above-named papers.....                  | 6 00.. |

The Weekly Bee Journal one year and Prof. Cook's Manual (bound in cloth) 3 25.. 3 00

Bee and Honey, (T. G. Newman) " 2 75.. 2 50

Binder for Weekly, 1881..... 2 85.. 2 75

Binder for Weekly for 1882 .....

2 75.. 2 50

The Monthly Bee Journal and any of the above, \$1 less than the figures in the last column.

☞ Constitutions and By-Laws for local Associations \$2.00 per 100. The name of the Association printed in the blanks for 50 cents extra.

Advertisements intended for the BEE JOURNAL must reach this office by Saturday of the previous week.

☞ Postage stamps, of one, two or three cent denomination, accepted for fractional parts of a dollar; but money is preferred.

Kendall's Spavin Cure is used from the Atlantic to the Pacific coast.

**The Monthly Bee Journal for 1883.**

At the request of many who have heretofore taken the Monthly and Semi-Monthly BEE JOURNAL, we shall next year print a Monthly consisting of 32 pages, issuing it about the middle of each month, at \$1.00 a year, in advance; 2 copies for \$1.80; 3 copies for \$2.50; 5 copies for \$4.00; 10 or more copies at 75 cents each. An extra copy to the person getting up a club of 5 or more.

The Weekly is now permanently established, and will be continued as heretofore.

The Weekly and Monthly BEE JOURNALS will be distinct papers, each having its own sphere of operation and different readers.

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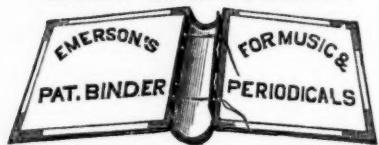
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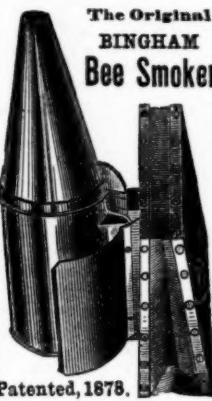
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